IFW

CASE 20757USC18

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF
HEIFETZ et al.
APPLICATION NO: 10/625,648
FILED: July 23, 2003
FOR: **HERBICIDE TOLERANCE ACHIEVED THROUGH PLASTID TRANSFORMATION**

Art Unit: TBA
Examiner: TBA

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Sir:

This paper is being filed before receipt of the first substantive Office Action. Therefore, no fees are required.

In accordance with 37 C.F.R. §1.56, applicant wishes to call the Examiner's attention to the references cited on the attached form(s) PTO-1449.

The listed references are of record in parent Application No. 09/059,164 filed April 13, 1998, and copies are available therein. However, applicant is willing to send copies of any or all of these references at the Examiner's request.

The Examiner is requested to consider the foregoing information in relation to this application and indicate that each reference was considered by returning a copy of the initialed PTO 1449 form(s).

Respectfully submitted,

Mary Kakefuda
Attorney for Applicants
Reg. No. 39,245

Syngenta
Patent Department
P.O. Box 12257
Research Triangle Park, NC 27709-2257
(919) 765-5071
Date: August 4, 2004

Attorney Docket No. 20757USCNT8
U.S. Serial No. 10/625,648

FILING BY "FIRST CLASS MAIL" UNDER 37 C.F.R. § 1.8

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1) Information Disclosure Statement
2) Form PTO-1449
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Melissa Hardy
Name

Signature

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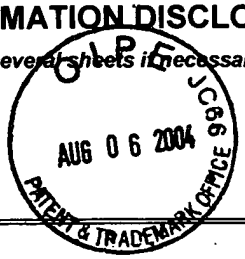

ATTY. DOCKET NO. 20757USC18
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U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE
	AA	5,407,808	4/18/95	Halling et al.	435	34	12/20/93
	AB	5,451,513	9/19/95	Maliga et al.	435	172.3	8/25/93
	AC	5,530,191	6/25/96	Maliga et al.	800	205	3/24/94
	AD	5,545,817	8/13/96	McBride et al.	800	205	3/11/94
	AE	5,576,198	11/19/96	McBride et al.	435	91.3	12/14/93
	AF	5,693,507	12/2/97	Daniell et al.	435	172.3	6/20/94
	AG	5,767,373	6/16/98	Ward et al.	800	205	6/6/95
	AH	5,939,602	8/17/99	Volrath et al	800	300	2/28/97
	AI	6,023,012	8/8/00	Volrath et al.			3/30/98
	AJ	4,940,835	7/10/90	Shah et al.	800	205	7/7/86
	AK	4,975,374	12/4/90	Goodman et al.	435	172.3	2/4/87
	AL	5,013,659	5/7/91	Bedbrook et al.	435	172.3	3/4/88

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	OFFICE	CLASS	SUBCLASS	TRANSLATION YES	TRANSLATION NO
	AM	0 332 104	9/13/89	EP			☐	☐
	AN	0 360 750	9/13/89	EP			☐	☐
	AO	0 449 376	10/2/91	EP			☐	☐
	AP	0 478 502 A2	4/1/92	EP			☐	☐
	AQ	0 479 359	4/8/92	EP			☐	☐

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent pages, Etc.)

	AR	Al-Hazimi et al., J. Chem. Soc. Perkins Trans. 1. 265-276, 1987
	AS	Allison et al. "Deletion of rpoB reveals a second distinct transcription system in plastids of higher plants" The EMBO Journal, 15:2802-2809 (1996)
	AT	Armbruster et al., "Herbicidal Action of Nitrophenyl Pyrazole Ether MON 12800: Immunolocalization, Ultrastructural, and Physiological Studies", Pestice Biochemistry and Physiology, 47: 21-35 (1993).

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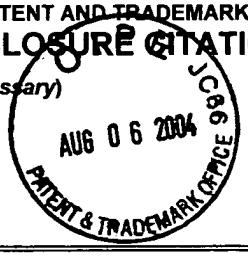

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	AA	5,539,092	7/23/96	Hasselkorn et al.	536	23.2	10/2/92
	AB						
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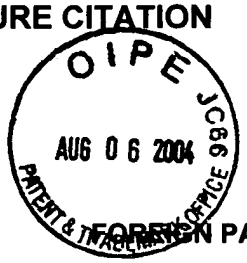

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	AA2	0 589 841	3/30/94	EP			☐	☐
	AB2	WO90/06748	6/28/90	PCT			☐	☐
	AC2	WO91/16440	10/31/91	PCT			☐	☐
	AD2	WO91/19418	12/26/91	PCT			☐	☐
	AE2	WO92/01042	1/23/92	PCT			☐	☐
	AF2	WO95/14099	5/26/95	PCT			☐	☐
	AG2	WO95/16783	6/22/95	PCT			☐	☐
	AH2	WO95/20668	8/3/95	PCT			☐	☐
	AI2	WO95/25787	9/28/95	PCT			☐	☐
	AJ2	WO95/34659	12/21/95	PCT			☐	☐
	AK2	WO96/04781	2/22/96	PCT			☐	☐
	AL2	WO97/04088	2/6/97	PCT			☐	☐
	AM2	WO97/04089	2/6/97	PCT			☐	☐
	AN2	WO97/06250	2/20/97	PCT			☐	☐
	AO2	WO97/32011	2/27/97	PCT			☐	☐
	AP2	WO97/32977	9/12/97	PCT			☐	☐
	AQ2	WO 95/24493	9/14/95	PCT			☐	☐
	AR2						☐	☐
	AS2						☐	☐
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	AX2						☐	☐
	AY2						☐	☐

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	AA3	Aspegren et al., "Secretion of a heat-stable fungal beta-glucanase from transgenic suspension-cultured barley cells," Molecular Breeding, 1: 91-99 (1995)
	AB3	Becerril et al., "Acifluorfen Effects on Intermediates of Chlorophyll Synthesis in Green Cucumber Cotyledon Tissues", Pesticide Biochemistry and Physiology, 35: 119-126 (1989).
	AC3	Bilang et al., "Containing excitement over transplastomic plants," Nature Biotechnology, 16: 333-334 (1998)
	AD3	Brenner et al., "Cloning of murine ferrocheletase", Proc. Natl. Acad. Sci. USA 88: 849-853 (1991).
	AE3	Brenner et al., "A FLUOROMETRIC ASSAY FOR MEASUREMENT OF PROTOPORPHYRINOGEN OXIDASE ACTIVITY IN MAMMALIAN TISSUE", Clinica Chimica Acta, 100: 259-266 (1980).
	AF3	Camadro et al., "A NEW ASSAY FOR PROTOPORPHYRINOGEN OXIDASE - EVIDENCE FOR A TOTAL DEFICIENCY IN THAT ACTIVITY IN A HEME-LESS MUTANT OF SACCHAROMYCES CEREVISIAE", Biochemical and Biophysical Research Communications, 106(3): 724-730 (1982).
	AG3	Camadro et al., "Cloning and Characterization of the Yeast HEM14 Gene Codoing for Protoporphyrinogen Oxidase, the Molecular Target of Diphenyl Ether-type Herbicides", The Journal of Biological Chemistry, 271(15): 9120-9128 (1996).
	AH3	Camadro et al., "MOLECULAR PROPERTIES OF YEAST AND LETTUCE PROTOPORPHYRINOGEN OXIDASES", ABSTRACT PAP AM CHEM. SOC., 111. (1-2) (1993).
	AI3	Camadro et al., "Photoaffinity labeling of protoporphyrinogen oxidase, the molecular target of diphenylether-type herbicides", Eur J of Biochem., 229: 669-674 (1995).
	AJ3	Camadro et al., The Journal of Biological Chemistry, 269(51): 32085-32091 (1994).
	AK3	Cardin et al., "Characterization of Protoporphyrinogen Oxidase from Rhodopseudomonas capsulata", Abstracts of the Annual Meeting Am. Soc. Microbiol., Abstract #K-85, 207 (1986).
	AL3	Che et al., "Localization of Target-Site of the Protoporphyrinogen Oxidase-Inhibiting Herbicide S-23142 in Spinacia-oleracea L.", Z. Naturforsch., 48(c): 350-355 (1993).
	AM3	Clarke et al. "Identification and expression of the chloroplast clpP gene in the conifer Pinus contorta" Plant Molecular Biology, 26: 851-862 (1994)
	AN3	Corrigall et al., "INHIBITION OF MAMMALIAN PROTOPORPHYRINOGEN OXIDASE BY ACIFLUORFEN", Biochemistry and Molecular Biology International, 34(6): 1283-1289 (1994).

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	AA4	Crews et al., "SYNTHESIS AND HERBICIDAL ACTIVITY OF bis-ARYLOXYBENZENES, A NEW CLASS OF PROTOX INHIBITORS", Abstracts of Papers American Chemical Society, Abstract #044. 209(1-2) (1995).
	AB4	Dailey et al., "Expression of a Cloned Protoporphyrinogen Oxidase", The Journal of Biological Chemistry, 269(2):813-815 (1994)
	AC4	Dailey T.A. et al., "Cloning, Sequence, and Expression of Mouse Protoporphyrinogen Oxidase", Archives of Biochemistry and Biophysics, 324(2): 379-384 (1995).
	AD4	Dailey T.A. et al., "Human protoporphyrinogen oxidase: Expression, purification, and characterization of the cloned enzyme", Protein Science, 5: 98-105 (1996).
	AE4	Daniell et al., "Containment of herbicide resistance through genetic engineering of the chloroplast genome," Nature Biotechnology, 16: 345-348 (1998)
	AF4	Datta et al., "Transformation of the Tobacco Chloroplast Genome with the aroA Gene to Confer Glyphosate Tolerance," Supplement to Plant Physiology, 111(2): 790 (1996)
	AG4	Derrick, Peter Michael, "An investigation into the mode of action of the herbicide M&B 39279", Dissertation Abstracts International, 50(10): 4283-B (1996).
	AH4	Deybach et al., "The mitochondrial location of protoporphyrinogen oxidase", Eur. J. Biochem., 149(2): 431-436 (1985).
	AI4	Duke et al., "Porphyric Pesticides Chemistry, Toxicology, and Pharmaceutical Applications", ACS Symposium Series 559, American Chemical Society, 1-318 (1994).
	AJ4	Duke et al., "Protoporphyrinogen Oxidase-Inhibiting Herbicides", Weed Science, 39: 465-473 (1991).
	AK4	Duke et al., "Protoporphyrinogen Oxidase as the Optimal Herbicide Site in the Porphyrin Pathway", ACS SYMP. SER. - Porphyric Pesticides 191-204 (1994)
	AL4	Duke et al., "PROSPECTS FOR HERBICIDES DESIGNED FOR SITES OF ACTION IN THE PORPHYRIN PATHWAY BEYOND PROTOPORPHYRINOGEN OXIDASE", Abstracts of Papers American Chemical Society, Abstract #129, 206(1-2) (1993).
	AM4	Duke, S.O., "PESTICIDES THAT ACT THROUGH PROPHYRIN ACCUMULATION", Abstracts of the 22nd Annual Meeting of the American Society for Photobiology, Abstract #SPM-B2, 59 (Spec. Issue) (1994).
	AN4	Elder et al., "A Radiochemical Method for the Measurement of Coproporphyrinogen Oxidase and the Utilization of Substrates other than Coproporphyrinogen III by the Enzyme from Rat Liver", Biochem. J., 169: 205-214 (1978).

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	AA5	Ems et al. "Transcription, splicing and editing of plastid RNAs in the nonphotosynthetic plant Epifagus virginiana" Plant Molecular Biology, 29: 721-733 (1995)
	AB5	EMBL SEQUENCE DATABASE ACC. NO M22063 REL. 19 22-APR-1989
	AC5	EMBL SEQUENCE DATABASE ACC. NO. T43573, REL. NO. 42, 3-FEB-1995
	AD5	Falbel et al., "Characterization of a Family of Chlorophyll-Deficient Wheat (Triticum) and Barley (Hordeum vulgare) Mutants with Defects in the Magnesium-Insertion Step of Chlorophyll Biosynthesis", Plant Physiology (Rockville), 104: 639-648 (1994).
	AE5	Ferreira et al., "Organization of the Terminal Two Enzymes of the Heme Biosynthetic Pathway ORIENTATION OF PROTOPORPHYRINOGEN OXIDASE AND EVIDENCE FOR A MEMBRANE COMPLEX*", The Journal of Biolocial Chemistry, 263(8): 3835-3839 (1988).
	AF5	Frustaci et al., "The Escherichia-coli vis A Gene Encodes Ferrochelatase, the Final Enzyme of the Heme Biosynthetic Pathway", Journal of Bacteriology, 175(7): 2154-2156 (1993).
	AG5	Gollub et al., "Yeast Mutants Deficient in Heme Biosynthesis and a Heme Mutant Additionally Blocked in Cyclization of 2 3 Oxidosqualene*", The Journal of Biological Chemistry, 252(9): 2846-2854 (1977).
	AH5	Guo et al., "High-performance liquid chromatographic assays for protoporphyrinogen oidase and ferrochelatase in human leukocytes", Journal of Chromatography Biomedical Applications, 566: 383-396 (1991).
	AI5	Hallahan et al., Plant Physiol. 100: 1211-1216, 1992
	AJ5	Hansson et al., "Bacillus subtilis Hem Y Is a Peripheral Membrane Protein Essential for Protoheme IX Synthesis Which Can Oxidize Coproporphyrinogen III and Protoporphyrinogen IX", Journal of Bacteriology, 176(19): 5962-5970 (1994).
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	AL5	Heifetz et al., "Chemical regulation of nuclear and plastid transgenes in plants," Supplement to Plant Physiology, 114(3): 308 (1997)
	AM5	Huang et al. "The Chlamydomonas chloroplast clpP gene contains translated large insertion sequences and is essential for cell growth" Mol Gen Genet, 244: 151-159 (1994)
	AN5	Ichinose et al., "Selection and Characterization of Protoporphyrinogen Oxidase Inhibiting Herbicide (S23142) Resistant Photomixotrophic Cultured Cells of Nicotiana tabacum", J. Plant Physiol., 146: 693-698 (1995)

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	AA6	Ihara et al., "Peroxidizing Phytotoxic Activity of 1,3,4-Thiadiazolidine-2-thiones and 1,2,4-Triazolidine-3,5-dithiones", Journal of Pesticide Science, 20: 41-47 (1995).
	AB6	Iida et al., "Isomerization and Peroxidizing Phytotoxicity of Thiadiazolidine-thione Compounds", Z. Naturforsch., 50(c): 186-192 (1995).
	AC6	International Search Report PCT/IB 95/00452
	AD6	Jacobs et al., "Effect of Diphenyl Ether Herbicides on Oxidation of Protoporphyrinogen to Protoporphyrin in Organellar and Plasma Membrane Enriched Fractions of Barley", Plant Physiol. (Bethesda), 97: 197-203 (1991).
	AE6	Jacobs et al., "Oxidation of protoporphyrinogen to protoporphyrin, a step in chlorophyll and haem biosynthesis", Biochem J., 244: 219-224 (1987)
	AF6	Jacobs et al., "Porphyrin Accumulation and Export by Isolated Barley (Hordeum-vulgare) Plastids. Effect of Diphenyl Ether Herbicides", Plant Physiol. (ROCKV), 101: 1181-1188 (1993).
	AG6	Jacobs J. M. et al., "Terminal Enzymes of Heme Biosynthesis in the Plant Plasma Membrane", Archives of Biochemistry and Biophysics, 323(2): 274-278 (1995).
	AH6	Jacobs J.M. et al., "Effects of Diphenyl Dther Herbicides on Porphyrin Accumulation by Cultured Hepatocytes", J. Biochem. Toxicology, 7(2): 87-95 (1992).
	AI6	Jacobs J.M. et al., "Effects of the Photobleaching Herbicide, Acifluorfen-methyl, on Protoporphyrinogen Oxidation in Barley Organelles, Soybean Root Mitochondria Soybean Root Nodules, and Bacteria", Archives of Biochemistry and Biophysics, 280(2): 369-375 1990
	AJ6	Jacobs J.M. et al., "Protoporphyrinogen Oxidation, an Enzymatic Step in Heme and Chlorophyll Synthesis: Partial Characterization of the Reaction in Plant Organelles and Comparison with Mammalian and Bacterial Systems1", Archives of Biochem and Biophys, 229(1): 312-319 (1984)
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	AL6	Jacobs N.J. et al., "Assay for Enzymatic Protoporphyrinogen Oxidation, a Late Step in Heme Synthesis", Enzyme (Basel), 28: 206-217 (1982).
	AM6	Jacobs N.J. et al., "CHARACTERISTICS OF PURIFIED PROTOPORPHYRINOGEN OXIDASE FROM BARLEY", Biochemical and Biophysical Research Communications, 161(2): 790-796 (1989).
	AN6	Jacobs N.J. et al., "MECHANISM OF PROTOPORPHYRIN IX ACCUMULATION IN PLANT CELLS TREATED WITH HERBICIDES INHIBITING PROTOPORPHYRINOGEN OXIDASE", Abstract PAP AM. CHEM. SOC., Abstract #113, 206 (1-2) (1993).

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	AA7	Jacobs N.J. et al., "Microbial Oxidation of Protoporphyrinogen an Intermediate in Heme and Chlorophyll Biosynthesis", Archives of Biochemistry and Biophysics, 197(2): 396-403 (1979).
	AB7	Jacobs N.J. et al., "Protoporphyrinogen Oxidation, a Step in Heme Synthesis in Soybean Root Nodules and Free-Living Rhizobia", Journal of Bacteriology, 171(1): 573-576 (1989).
	AC7	Jansen et al., "Mode of Evolved Photooxidant Resistance to Herbicides and Xenobiotics", Z. Naturforsch Sect. Biosci., 45(c): 463-469 (1990).
	AD7	Kataoka et al., "Isolation and Partial Characterization of Mutant Chlamydomas reinhardtii Resistant to Herbicide S-23142", J. Pesticide Sci., 15:499-451(1990)
	AE7	Klemm et al., "Protoporphyrinogen oxidation coupled to nitrite reduction with membranes from Desulfovibrio-gigas", FEMS Microbiology Letters, 61: 61-64 (1989).
	AF7	Klemm et al., "Purification and Properties of Protoporphyrinogen Oxidase from an Anaerobic Bacterium, Desulfovibrio-gigas", Journal of Bacteriology, 169(11): 5209-5215 (1987).
	AG7	Kohno et al., "Peroxidizing Phytotoxic Activity of Pyrazoles", Journal of Pesticide Science, 20: 137-143 (1995).
	AH7	Kolarov et al., "RAT LIVER PROTOPORPHYRINOGEN IX OXIDASE: SITE OF SYNTHESIS AND FACTOR INFLUENCING ITS ACTIVITY", Biochemical and Biophysical Research Communications, 116(2): 383-387 (1983).
	AI7	Komives et al., "MECHANISMS OF PLANT TOLERANCE TO PHYTODYNAMIC HERBICIDES", Abstract PAP AM. CHEM. SOC., Abstract #128, 206(1-2) (1993).
	AJ7	Koop et al. "Integration of foreign sequences into the tobacco plastome via polyethylene glycol-mediated protoplast transformation" Planta, 199: 193-201 (1996)
	AK7	Labbe-Bois R., "The Ferrochetelase from Saccharomyces-Cerevisiae. SEQUENCE, DISRUPTION, AND EXPRESSION OF ITS STRUCTURAL GENE HEM15*", The Journal of Biological Chemistry, 265(13): 7278-7283 (1990).
	AL7	Labbe et al., "Fluorometric assays for coproporphyrinogen oxidase and protoporphyrinogen oxidase", Analytical Biochemistry, 149: 248-260 (1985).
	AM7	Lee et al., "Cellular Localization of Protoporphyrinogen-Oxidizing Activities of Etiolated Barley (Hordeum vulgare L.) Leaves", Plant Physiol., 102:881-889 (1993)
	AN7	Lee et al., "PEROXIDASE INVOLVEMENT IN THE ACCUMULATION OF PROTOPORPHYRIN IX IN ACIFLUORFEN-METHYL-TREATED PLANT TISSUES", Plant Physiology (Rockville), 105(1 Suppl.): 125 (1994).

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